

CLAIMS

What is claimed is:

1. A display system, comprising:

an active matrix type display panel;

a data driver that drives data lines of the display panel; and

a scan driver that scans scan lines of the display panel,

wherein, the data driver outputs a drive voltage corresponding to a predetermined gray scale value to the data lines during a frame period that includes a second and subsequent frames, the second frame being the next frame after a first frame where a display stopping signal is input, then outputs a non-display voltage to the data lines after the frame period ends when the display stopping signal for stopping an image display of the display panel is input, and

the scan driver outputs a selecting voltage to the scan lines, and scans the scan lines during the first frame and the frame period, and outputs a non-selecting voltage to all of the scan lines after the frame period ends.

2. A display system, comprising:

an active matrix type display panel;

a data driver that drives data lines of the display panel;

a scan driver that scans scan lines of the display panel;

a first frame synchronization circuit that outputs a display control signal, which synchronizes a display stopping signal for stopping an image display of

the display panel with a frame pulse that specifies a vertical scan period of the display panel;

a second frame synchronization circuit that outputs a scan control signal, which synchronizes the display control signal with the frame pulse; and

an OFF data output control circuit that outputs an OFF data control signal for outputting a drive voltage corresponding to a predetermined gray scale value to the data lines based on the display control signal during a frame period that includes a second and subsequent frames, the second frame being the next frame after a first frame where the display stopping signal is input,

wherein the data driver outputs the drive voltage to the data lines based on the OFF data output control signal during the frame period, then outputs a non-display voltage to the data lines after the frame period ends, and the scan driver outputs a selecting voltage to the scan lines, and scans the scan lines based on the scan control signal during the first frame and the frame period, and outputs the non-selecting voltage to all of the scan lines after the frame period ends.

3. The display system according to claim 2, wherein the display stopping signal is at least one of:

an initializing signal for the data driver; and

a sleep signal that sets a sleep state;

in which drive for the data lines is stopped.

4. The display system according to claim 2, wherein a drive voltage corresponding to the predetermined gray scale value is a drive voltage corresponding to a gray scale value of 0.

5. A data driver for driving data lines of an active matrix type display panel, comprising:

a first frame synchronization circuit that outputs a display control signal; which synchronizes a display stopping signal for stopping an image display of the display panel with a frame pulse that specifies a vertical scan period of the display panel;

a second frame synchronization circuit that outputs scan control signals, which synchronizes the display control signal with the frame pulses;

an OFF data output control circuit that outputs an OFF data output control signal for outputting a drive voltage corresponding to a predetermined gray scale value to the data lines based on the display control signal during a frame period that includes a second and subsequent frames, the second frame being the next frame after a first frame where the display stopping signal is input; and

a drive circuit that outputs the drive voltage corresponding to the predetermined gray scale value to the data lines,

wherein the drive circuit outputs the drive voltage to the data lines based on the OFF data output control signals during the frame period, and outputs a non-display voltage to the data lines after the frame period ends.

6. The data driver according to claim 5, wherein the scan control signal is output to the scan driver that scans scan lines of the display panel, and the scan driver outputs a selecting voltage to the scan lines, and scans the scan lines based on the scan control signal during the first frame and the frame period, and outputs a non-selecting voltage to all of the scan lines after the frame period ends.

7. The data driver according to claim 5, wherein the display stopping signal is at least one of:

- an initializing signal for the data driver; and
- a sleep signal that sets a sleep state;

in which drive for the data lines is stopped.

8. The data driver according to claim 5, wherein the drive voltage corresponding to the predetermined gray scale value is a drive voltage corresponding to a gray scale value of 0.

9. A display drive method for a display system, comprising:

- an active matrix type display panel;
- a data driver that drives data lines of the display panel; and
- a scan driver that scans scan lines of the display panel,

wherein the data driver outputs a drive voltage corresponding to a predetermined gray scale value to the data lines during a frame period that includes a second and subsequent frames, the second frame being the next

frame after a first frame where a display stopping signal is input, when the display stopping signal for stopping an image display of the display panel is input, and the scan driver outputs a selecting voltage to the scan lines, and scans the scan lines during the first frame and the frame period, and the data driver outputs a non-display voltage to the data lines, while the scan driver outputs a non-selecting voltage to all of the scan lines after the frame period ends.

10. The display system according to claim 1, wherein the display stopping signal is at least one of:

an initializing signal for the data driver; and

a sleep signal that sets a sleep state;

in which drive for the data lines is stopped.

11. The display system according to claim 1, wherein a drive voltage corresponding to the predetermined gray scale value is a drive voltage corresponding to a gray scale value of 0.